

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for obtaining mold design parameters, in an event of implementation of injection molding using a mold having a plurality of resin inflow conduits to cavity,

comprising a step of obtaining a mold design parameter which is related to at least one of the arrangement, the shapes and the sizes of said resin inflow conduits, by combination of a numerical analysis method for calculating an injection molding process and a computer-aided optimization method, for the purpose of obtaining a desired injection molding condition,

wherein said purpose is to obtain a molding condition in which weld line occurrence in a molding can be suppressed or controlled, and

wherein an area in which weld line occurrence is intended to be suppressed or controlled is divided into a plurality of areas and a weighting weld line occurrence quantity in the plurality of the areas is used as a weld line evaluation value, thereby inducing weld line occurrence into a specified area or avoiding weld line occurrence in a specified area.

2-4. (canceled).

5. (previously presented): The method for obtaining mold design parameters according to claim 1, wherein said purpose is to obtain a molding condition in which both reduction of a

mold clamping force required for molding and suppression or control of weld line occurrence in a molding product can be achieved.

6. (previously presented): The method for obtaining mold design parameters according to claim 5, wherein an objective function for optimization includes a weighting addition of mold clamping force required for molding and a weld line evaluation value for evaluating weld line occurrence.

7. (previously presented): The method for obtaining mold design parameters according to claim 1, wherein said mold design parameter includes numbers and/or positions of gates that are inflow openings to cavity of said mold.

8. (previously presented): The method for obtaining mold design parameters according to claim 1, wherein said mold design parameter includes the sizes and/or the shapes of gates that are inflow openings to the cavity of said mold.

9. (previously presented): The method for obtaining mold design parameters according to claim 1, wherein in case of determining said mold design parameter, a process parameter to set a resin inflow in a molding process is determined together with the mold design parameter.

10. (previously presented): The method for obtaining mold design parameters according to claim 9, wherein said process parameter is a parameter that controls actions of inflow regulation valves arranged in a plurality of the resin inflow conduits.

11. (previously presented): The method for obtaining mold design parameters according to claim 10, wherein said process parameters are optimized under a condition where at least one inflow regulation valve is opened at a certain timing during a resin filling process.

12. (currently amended): A method for producing an injection molding in the case of implementation of injection molding with a mold having a plurality of resin inflow conduits to a cavity, comprising the steps of:

determining a mold design parameter in relation to at least one of the arrangement, the shapes and the sizes of said resin inflow conduits, by combining a numerical analysis method for calculating an injection molding process with a computer-aided optimization method for a purpose of obtaining a desired injection molding condition;

producing the mold based upon the determined mold design parameter; and

carrying out the injection molding with the produced mold,

wherein said purpose is to obtain a molding condition in which weld line occurrence in a molding can be suppressed or controlled, and

wherein an area in which weld line occurrence is intended to be suppressed or controlled is divided into a plurality of areas and a weighting weld line occurrence quantity in the plurality of the areas is used as a weld line evaluation value, thereby inducing weld line occurrence into a specified area or avoiding weld line occurrence in a specified area.

13. (currently amended): A computer readable medium having stored thereon instructions for enabling a computer to execute a process for obtaining a desired injection

molding condition in the case of implementation of injection molding by use of a mold having a plurality of resin inflow conduits to a cavity, wherein a process that determines a mold design parameter in relation to at least one of the arrangement, the shapes and the sizes of said resin inflow conduits, by combining a numerical analysis method for calculating an injection molding process with a computer-aided optimization method is carried out by a computer,

wherein said purpose is to obtain a molding condition in which weld line occurrence in a molding can be suppressed or controlled, and

wherein an area in which weld line occurrence is intended to be suppressed or controlled is divided into a plurality of areas and a weighting weld line occurrence quantity in the plurality of the areas is used as a weld line evaluation value, thereby inducing weld line occurrence into a specified area or avoiding weld line occurrence in a specified area.

14. (currently amended): An injection molding device comprising:

a molding device main body that supplies resin material to a mold having a plurality of resin inflow conduits to a cavity, through said resin inflow conduits;

a memory section that memorizes process parameters determined by combining a numerical analysis method for calculating an injection molding process and a computer-aided optimization method; and

a control section which controls said molding device main body based upon process parameters in accordance with the mold to be used, and carries out injection molding by controlling time-sequentially an inflow of the resin material from said resin inflow conduits to said mold,

wherein said purpose is to obtain a molding condition in which weld line occurrence in a molding can be suppressed or controlled, and

wherein an area in which weld line occurrence is intended to be suppressed or controlled is divided into a plurality of areas and a weighting weld line occurrence quantity in the plurality of the areas is used as a weld line evaluation value, thereby inducing weld line occurrence into a specified area or avoiding weld line occurrence in a specified area.